REMARKS

In the Office Action Summary, the Examiner noted that claims 1-117 were pending in the application and the Examiner rejected all claims. For reasons set forth below, Applicants respectfully submit that the claims pending at the time of the Office Action included claims 1-132. Claims 7, 8, 11 and 130-132 have been amended and claims 133-147 have been added, thus claims 1-147 are now pending in the application.

Claims Not Examined By The Examiner

At page 2 of the Office Action, the Examiner states that newly added claims are not covered by the reissue oath/declaration and that newly added claims 118-132 have not been considered. The Examiner alleges that the reissue oath/declaration is defective because the reissue oath/declaration fails to contain the statement required under 37 CFR §1.175 regarding the reissue oath or declaration. Applicants submit that the Examiner is in clearly in error in refusing to consider Applicants' claims 118-132.

Reissue Declaration

The regulations at 37 CFR §1.175 require that the reissue oath or declaration, in addition to complying with the requirements of 37 CFR §1.63, must also state:

> The applicant believes the original patent to be wholly or partly inoperative or invalid by reason of a defective specification or drawing, or by reason of the patentee claiming more or less than the patentee had the right to claim in the patent, stating at least one error being relied upon as the basis for reissue; and
>
> All errors being corrected in the reissue application up to the time of filing of the oath or declaration under this paragraph arose without any deceptive intention on the part of the applicant.

Paragraph 6 of the reissue declaration states:

> "Applicants verily believe the original '667 patent to be wholly or partly inoperative or invalid by reason of patentees' claiming more or less than they had the right to claim in the patent."

Paragraph 7 of the reissue declaration states:

> "...Applicants intend to broaden the claims. A first error being relied upon is the failure to claim the charge control circuit without claiming the system for controlling the supply of power from a charger circuit."

Paragraph 8 of the reissue declaration states:

> "With respect to the claims, a second and more general error relied upon as the basis for the reissue is the failure to present the new claims included in the reissue application, which new claims have a scope varied from and, and in some respects broader than, those of the issued patent."

Paragraph 9 of the reissue declaration states:

> "All errors, including those listed above, which are being corrected up to the time of filing of this reissue application arose without any deceptive intention on the part of the applicants."

Further, the regulations at 37 CFR §1.175state:

(b)(1) For any error corrected, which is not covered by the oath or declaration submitted under paragraph (a) of this section, applicant must submit a supplemental oath or declaration stating that every such error arose without any deceptive intention on the part of the applicant. Any supplemental oath or declaration required by this paragraph must be submitted before allowance and **may** [emphasis added] be submitted:

(i) With any amendment prior to allowance; or

(ii) In order to overcome a rejection under 35 U.S.C. 251 made by the examiner where it is indicated that the submission of a supplemental oath or declaration as required by this paragraph will overcome the rejection.

The Examiner does not appear to have alleged that the reissue oath/declaration is defective with respect to claims 11-117 as filed originally or as amended. However, claims 11-117, as amended, also correct errors not covered by the original reissue oath/declaration.

The Examiner has apparently interpreted the Regulations to mean that the supplemental oath or declaration **shall** be submitted with any amendment submitted prior to allowance. Such an interpretation is clearly contrary to the Manual of Patent Examining Procedure (MPEP) §1444 which, in a subheading entitled Supplemental Reissue Oath/Declaration Under 37 CFR 1.175(b)(1), states the following:

> "Once the reissue oath/declaration is found to comply with 37 CFR 1.175(a), it is not required, nor is it suggested that a new reissue oath/declaration be submitted together with each new amendment and correction of error in the patent. During the prosecution of a reissue application, amendments are often made and additional errors in the patent are corrected. A supplemental oath/declaration need not be submitted with each amendment and additional correction. Rather, it is suggested that the reissue applicant wait until the case is in condition for allowance, and then submit a cumulative reissue oath/declaration pursuant to 37 C.F.R 1.175(b)(1)."

Thus, it should not be necessary to submit a supplementary oath/declaration during prosecution. At the end of prosecution, Applicants will certainly submit a supplementary oath/declaration. This supplementary oath/declaration will contain a no-deceptive-intent statement for any changes made after the original oath/declaration. Claims 118-132 and any additionally added claims will be addressed at that time as necessary.

Claim Objections:

At page 3 of the Office Action, the Examiner objects to claim 11 due to informalities. Applicants submit that no informality is included in claim 11 with respect to "AC adaptor" as alleged by the Examiner. The term "AC adaptor" is used consistently with the term "AC adaptor" as that term is used in the specification. For example, see col. 4, line 21, col. 5, line 5, col. 9, line 19, and col. 10, line 40.

The preamble of claim 11 has been amended to recite that the AC adaptor supplies DC power. Claim 11 has been amended to recite "a connector for receiving DC power from the AC adapter." Applicants submit that the amendment of claim 11 overcomes any objection as to the connector "receiving" power from the AC adaptor. The connector referred to in claim 11 corresponds, for example, to connector 51 as shown in FIGS. 4 AND 11 which receives DC power from the AC adaptor.

The 35 U.S.C. §112 Rejection

At page 4 of the Office Action, claims 11-117 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 11-15, the Examiner asserts that "the power charged to the battery becomes a value assigned in advance" is confusing since "the power" is not a measurable battery parameter.

Applicants respectfully disagree. For example, claim 11 recites "a charge control circuit for controlling the charger to control the charging power the charger supplies to the battery so that a sum of the power applied to the load and the power charged to the battery becomes a value assigned in advance." According to an embodiment of the invention, the sum of the current applied to the load and the current charged in the battery is made to become a constant value. A value of the maximum DC current output from an AC adapter minus the current applied to the load is made to be a charging current value. The AC adapter produces a constant DC output voltage and current supplied to the load and the current supplied to the battery vary. Since the output voltage is constant, it can necessarily be concluded that "the charging current + the current applied to the load = a constant value" is equivalent to "the charging power + the power applied to the load=a constant value." Taking the above equivalence into consideration, the Applicants use the term "power" instead of "current" in claim 11.

The Examiner asserts that "power" is not a measurable battery parameter. However, the phrase "the power charged in the battery becomes a value assigned in advance," which is pointed out by the Examiner, expresses the result of the control, and thus should not be interpreted as requiring a "measurable parameter." Therefore, the Applicants respectfully submit that the Examiner's comment is incorrect.

Regarding claim 12, the term "value" in claim 12 corresponds to the "current" and the term "value" in claim 13 corresponds to the "voltage." The Applicants respectfully submit that no indefiniteness is created by the use of the term "value" in claims 12 and 13.

Regarding claim 15, the Applicant uses the term "power" for the same reason as mentioned above regarding claim 11.

The 35 U.S.C. §103 Rejection:

At page 4 of the Office Action, claims 11-117 are rejected under 35 U.S.C. §102(a) as being unpatentable over WO/93/19508. This rejection is respectfully traversed. To support a finding of obviousness based on a single reference, the single reference must suggest the desirability of modifying the disclosure of the single reference as needed to accomplish the invention (see *In re Gordon*, 733 F.2d 900,221 U.S.P.Q. 1125 (Fed.Cir.1984), *Schneck v. Gordon*, 713 F.2d 782,218 U.S.P.Q. 699(Fed.Cir.1984) and *Cooper v. Ford*, 748 F.2d 677,223 U.S.P.Q. 1286(Fed.Cir.1984)).

The disclosure of WO 93/19508 is significantly different from the present invention. WO 93/19508 makes no attempt to control the current to the battery so that the current to the battery varies as the current to the load varies or to control the current to the battery so that the capacity of the AC adaptor is not exceeded. The WO 93/19508 charger has modes of constant current, trickle charge, and OFF in relation to the battery. WO 93/19508 also has a mode where the battery is disconnected and the charger/regulator enters a constant voltage mode to supply the load. In WO 93/19508, the AC adaptor must be capable of supplying the maximum charging current of the battery and the maximum current of the load simultaneously. Thus, the features of the present invention which vary the current to the battery to limit the current to the battery and the current to the load to a value are unnecessary in the charger/regulator of WO 93/19508.

As shown in Fig. 2 of WO93/19508, the system of WO93/19508 senses a charging current at a SENSING AND CONTROL 404 and controls a charger output voltage by the thus sensed charging current. In WO93/19508, the charger output voltage is so controlled that the charging current to a battery becomes constant. See page 6, line 37 to page 7, line 30 of WO93/19508.

Regarding claims 11-34 of the present invention, the charger is controlled so that a sum of the power applied to the load and the power charged to the battery becomes a value which is assigned in advance. On the other hand, the system of WO93/19508 controls the charger output voltage so that the current applied to the battery becomes constant. Accordingly, claims 11 to 34 of the present invention are different from WO93/19508. Also, as the Examiner recognized with respect to WO93/19508, in item 6 of the current Office Action, i.e., "controlling the power . . . so that regardless of the rate of charge of the battery 402, a constant current is maintained for charging the battery 402", that WO93/19508 is different from the present invention as claimed in claims 11-34. Accordingly, claims 11-34 would not have been obvious in view of WO93/19508.

Regarding claims 35-88, an input voltage from a power source is detected and a charging power is controlled according to the detected input voltage. On the other hand, the system of WO93/19508 senses a charging current of the battery, controls a charger output voltage according to the sensed charging current and thereby maintains the charging current constant. Accordingly, claims 35-88 would not have been obvious in view of WO93/19508.

Regarding claims 89-100, the charger is so controlled that a sum of the power applied to the load and the power fed to the battery becomes a value which is assigned in advance. On the other hand, the system of WO93/19508 controls the charger output voltage so that the current applied to the battery becomes constant. Accordingly, claims 89-100 of the present invention are different from WO93/19508. Also, as the Examiner recognized with respect to WO93/19508, in item 6 of the current Office Action, i.e., "controlling the power . . . so that regardless of the rate of charge of the battery 402, a constant current is maintained for charging the battery 402", WO93/19508 is different from the present invention. Accordingly, claims 89-100 would not have been obvious in view of WO93/19508.

Regarding claims 101-112, a power input from a power source of an input section applies power to both a battery and a load. A power input sensor obtains power input information by sensing the input of power from the input section. A charge control circuit controls the charging power a charger supplies to the battery based on the sensed input information so that a sum of the power applied to a load and the power charged to a battery from the input section is substantially in a current range in which said output voltage of the power source is substantially the constant voltage.

In WO93/19508, the unit 404 senses a current. However, the unit 404 senses only the charging current. Accordingly, claims 101-112 and WO93/19508 differ in object to be sensed. Further, in claims 101-112, the control is made so as not to allow the voltage of the input to deviate beyond a constant voltage range. The system of WO93/19508 senses the charging current and changes the charger output voltage so as to make the charging current become constant. Accordingly, claims 101-112 would not have been obvious in view of WO93/19508.

Regarding claims 113-117, it is disclosed that a sense resistor for a charger control is used for detecting a discharge of a battery so as to predict the remaining amount of charge in the battery. The Examiner did not provide any substantive reasons for rejection of these claims.

Regarding claims 118-129 of the present invention, an input from the charger is sensed. This input is used for applying power to both the battery and the load. The unit 404 of the WO93/19508 also senses a current. However, the unit 404 senses only the charging current. Accordingly, claims 118-129 and WO93/19508 differ in object to be sensed. Further, in claims 118-129, the control is made so as not to allow the voltage of the input to deviate beyond a constant voltage range. The system of WO93/19508 senses the charging current and changes the charger output voltage so as to make the charging current become constant. Accordingly, claims 118-129 are quite different from WO93/19508.

Regarding claims 130-132 of the present invention, a power converter regulator is further provide for varying the control input so as to limit the current drawn from the power converter to a power converter maximum output current. On the other hand, the system of WO93/19508 senses the charging current and changes the charger output voltage so as to make the charging current become constant. Accordingly, claims 130-132 would not have been obvious. Claims 130-132 have been amended to change the term "power supply circuit" to "control circuit" so as to avoid any inference which may have existed that the "power supply circuit" included an AC/DC converter.

New Claims 7 and 8

Claims 7 and 8 have been amended to correct spelling and grammatical errors only.

New Claims 133-147

Claims 133-147 are similar to claims 11-25 and differ from claims 11-25 in that claims 133-147 are recited in terms of charging current rather than in terms of charging power as recited in claims 11-25.

Summary

Applicants submit that the Examiner is in clearly in error in refusing to consider Applicants' claims 118-132. It is respectfully requested that the Final Rejection be withdrawn and that all of claims 1-147 be examined. Applicants submit that the prior art does not disclose or suggest the invention as claimed in claims 1-147 and thus claims 1-147 define subject matter patentable over the prior art.

If there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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on October 23, 2001

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Date: 10-23-01